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ABSTRACT

This paper offers an examination of the transformation of higher education over the last century with a focus on some current tensions and some ideas for responding to the rapidly changing environment. Early sections of the paper describe the "massification" of higher education in which 40 to 50 percent of the population participate in postsecondary studies. The paper outlines two stages of massification. In the first stage there are universities and "the others." (e.g., California's three distinct institutional types within its postsecondary system). In the second stage there is differentiation within the institutions. However, differentiation also results in pressures for accountability, increased regulation, and a distinction between teaching and research. The paper argues that increasing costs will be the most substantial challenge to mass higher education. It is predicted that revenues will increase at a rate lower than required to maintain the quality, scope, and method of production at current levels. The paper suggests that these concerns have been ignored or denied to date. The paper outlines 11 propositions to more effectively make the transition to the future. The first four are technical and cost-related. The last seven are based on accountability, cost effectiveness, productivity and responsiveness. (JB)

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Some Problems and Challenges in a Changing World

Discussion Series
- Issue 4 -

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HIGHER EDUCATION
Some Problems and Challenges in a Changing World

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Discussion Series
- Issue 4 -

Council of Ontario Universities
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TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

INTRODUCTION 4

UNDERSTANDING THE CURRENT RESPONSIBILITIES OF UNIVERSITIES 8

SOME CONSEQUENCES OF CHANGE 9

INCREASING HETEROGENEITY 10

THE STAGES OF EXPANSION – A CONTROVERSIAL PERSPECTIVE 11

THE ISSUES OF COST AND ACCOUNTABILITY 13

SOME PROPOSITIONS 17

CONCLUSION 23

EXECUTIVE SUMMARY

The expansion of the post-secondary education system is rooted in a number of historical developments. First, in the late 1800s (in the U.S.), elementary and secondary school systems were expanded. Secondary schools were viewed as a "gateway", placing automatic pressure on post-secondary institutions. Second, universities underwent a dramatic change in curriculum, extending beyond religious and classical studies. Finally, there was a shift in the perceived civic function of universities. They were no longer solely trainers of clerics and civil servants, but of other professionals such as teachers and lawyers. The value of associated research at universities became important to the future of the economy and country. A university education has also come to be viewed as a right of citizenship, a means of climbing the social mobility ladder, causing further demand for access.

The consequences of "massification" of higher education, in which 40 to 50 per cent of the population participate in post-secondary studies, include increased part-time instruction, fewer elite jobs for graduates and postponement of the perceived "payoff" resulting from the acquisition of a university diploma.

One of the most obvious consequences is increased heterogeneity on campus. Today the demography of both staff and students at universities encompasses a widening scope of individuals and groups. It has also opened the doors to different levels of preparedness and learning capacities among students, as well as differences in their aims and motivation for studying.

Differentiation is a solution to some of the problems arising from heterogeneity. There must be differentiation between the various types of institutions (eg., colleges and universities) and differentiation among institutions of the same generic type. However, access between the groups can and must be available. It is stratification in the American system which has allowed the great universities to emerge because they have concentrated their resources on specific areas providing the necessary educational experience which not all students can share.

Two stages of "massification" are outlined in the paper. In the first stage, there are the universities and "the others". In the California system, for example, there are three distinct institutional types. In the second stage, there is differentiation within the institutions where the issues of quality have been resolved around equity, where there is managed growth, and where there is increased participation from stakeholder groups. However, the realization of differentiation also results in pressures for accountability, increased regulation, and a distinction between teaching and research.

Increasing costs will be the most substantial challenge to mass higher education. Investment in higher education is heavily dependant upon the general state of the economy. This prompts the question of whether or not universities provide sufficient value-added to warrant priority of investment.

It is predicted that revenues will increase at a rate lower than required to maintain the quality, scope and method of production at current levels, a concern that has been ignored or denied to date.

The paper outlines 11 propositions to make the transition to, and for managing in, the "post-mass" age. The first four are technical in nature and cost-related.

1. When assessing the cost of higher education, comparisons should ensue between like institutions as well as between institutional types.

2. Allocation of research costs: individual institutions are no longer the appropriate unit because of advanced technology and access to information.

3. Within and between institutions, it is necessary to re-examine the allocation of resources – teaching, scholarship and service; does the allocation best reflect society's needs?

4. Costs of higher education should be/continue to be shared between particular patrons and students.

The remaining seven propositions are based on accountability (not fiscal), in other words, cost effectiveness and productivity as well as responsiveness.

5. Responsiveness will be particularly difficult for institutions based on collegial notions of governance.

6. New methods must be found to increase productivity and possibly reduce costs.

7. To realize increased productivity, consideration must be given to a wider range of teaching modes, as well as new ideas regarding the structure of university-based research programs.

8. There must be revision of the undergraduate curriculum at both colleges and universities.

9. Various functions of institutions of higher education should and will be funded separately. Choices will have to be made to ensure the quality of standards are maintained and improved.

10. Heterogeneity of institutional types and students will increase. The demands for institutional responsiveness will grow.

11. Access to and survival of our institutions of higher education will depend on developing better relationships and playing an active role with elementary and secondary schools, as well as being cognizant of the concerns and the resources of other sectors and agencies.

More research and dialogue must take place before the issues brought forward in this paper can be resolved fully. Universities must fully understand and realize their role in society. They must be, and be seen to be, supportive of all social investment, be it political, cultural, or in other realms, in order to ensure that society will be prepared to benefit from the value of the investment made in higher education.

INTRODUCTION

Our cultural, political, and economic environment is shifting at such a breathtaking pace that it is difficult, even for the most acute observers, to bring things into some kind of useful focus. How then can one consider carefully the appropriate future role of higher education? Higher education exists to serve the society that supports it, but in what way and with what type of educational and scholarly commitment? Surely the answer to these questions depends, in large part, on society's aspirations and the challenges it faces. However, which of the many developing and sometimes conflicting motifs we see about us will become the dominating themes of the next decades? The last century has witnessed an enormous transformation of higher education in the most highly industrialized countries – a transformation that reflects the changing environment of these societies. The century of Lenin, Stalin, Roosevelt, Churchill, Hitler, the "Cold War", Freud, Einstein, Crick and Watson is drawing to a close. New challenges to the human condition are arising – the challenges of demography, new forms of communication, the environment, technology, political and cultural fragmentation (if not disintegration), and, finally, challenges to the role of rationality in helping us achieve a better understanding of the meaning of the human experience. Surely these will have an impact on the role and meaning of higher education. The purpose of this essay is to examine the transformation of higher education over the last century with a focus on some of the current tensions (internal and external) that have developed within the system and to suggest some initial ideas for responding to this rapidly changing environment.

It is a commonplace of our shared experience that there is – as compared to even a half century ago – a much greater proportion of our fellow citizens participating as students in our post-secondary institutions. In the United States, for example, expenditures for higher education have grown four times as fast as Gross Domestic Product. Older institutions have expanded and, in many cases, transformed themselves. New institutions have been formed and a much greater variety of post-secondary institutions has developed in order to meet the needs of a changing society – and global environment – and a rapidly expanding student body. Moreover, the nature of these institutions (even those with the same generic appellation), the character of the students' participation in them, the history – and, therefore, the meaning – of this participation,

the internal ideals and the civic functions of these institutions – all of these have evolved in significant ways. Particular countries also have quite distinct cultural inheritances in this respect even among the OECD countries, let alone in other countries with even more dramatically different histories, cultures and current experience. Furthermore, each of the OECD countries has handled this expansion in quite distinctive ways that, to some considerable extent, reflect their particular social objectives.

In this context, our observations must be understood as arising from – although we hope not entirely limited by – our own background and experience in Canada and the United States. Further, what follows will focus primarily on universities, rather than other important institutions (e.g., community colleges, technical institutes, research institutes) of higher or tertiary education. As a final "caveat", we would point out that in thinking about the contrast between an earlier era of "elite" and the current era of "mass" higher education, it might be better to characterize the contrast as between "smaller" and "larger", or, at very least, a different kind of elitism. After all, the "eliteness" of an earlier era was by no means simply a question of selection – with regard to either students or faculty – solely on grounds of intellectual capacity and/or promise. Access to higher education has always been a complex matter of education, finance, geography, privileges of one sort or another, and social values which have shaped both the nature of higher education programs and the size and composition of the student body and faculty. We should always remember that universities, like other institutions, are defined by a set of rules designed to structure human interactions. Moreover, while these rules may or may not be socially optimal, they do reflect the interest of those powerful enough to enforce the rules.

If we are to address the factors that are driving or, indeed, inhibiting the continued expansion of higher education in the developed world, it is useful to begin by recalling some of the history of the enormous expansion that took place over the last century. There were, historically, at least three closely related developments which deserve special mention as central to the context which led to the rapid expansion of the university system in many industrialized nations. First, there was the decision – at different times in different places but around 1870 in the United States – to proceed with nearly universal education at the elementary and the secondary level. Without this development, the expansion of post-secondary education that has taken place in this century would not have been possible. Once the expansion of secondary schooling began to take place, it was, given the rapidly changing economic environment, only a question of time until the pressure for admission to post-secondary education, and the special opportunities it provided, both developed and was responded to. In the American example, it took almost fifty years – i.e., until just after World War I – as Ortega y Gasset has quite clearly described, before the

stress on democratization and equal opportunity began actually to make itself felt in higher education.

Second, there was – again in the late nineteenth century – an associated change (i.e., expansion of secularization) in the nature of both the university and its curriculum. It was at that moment that the modern North American university developed out of a confluence of European models; certain local traditions, including the rather universalistic outlook of liberal Protestantism; a cultural preference for meritocracy; a certain type of egalitarianism; immigration; industrialization; and, finally, in response to market forces emanating from rapidly industrializing nations organized, for the most part, around private markets. The curriculum, for example, moved from its traditional focus on biblical and classical studies – often organized around grammar, rhetoric, recitation and logic – to a much expanded focus on language and literature (now including the vernacular literature such as Shakespeare), science and philosophy (the latter including aspects of what is now considered social science). Rather quickly a further evolution took place to a curriculum organized around the natural sciences, the evolving social sciences and the humanities, which included such "novelties" as history, especially national histories designed, in part, to create a past useable for nation building. Current debates around multiculturalism (i.e., whose story is to be told?, whose myths are to guide us now?, etc.) are important contemporary echoes of the curricular transformation that began over a century ago and is not yet complete. This expansion and redefinition of the curriculum – driven by new learning, the rejection of dogmatic authority, and national needs of various kinds – was also accompanied by a substantial delegation of power to the faculty, the development of academic freedom, the organization of academic disciplines and the slow institutionalization of extramural scholarly programs especially in science and engineering.

Third, and intimately related to this secularization and expansion of the curriculum, there was a change in the perceived civic function of higher education and the university. If the curriculum of the past had been sufficient to preserve the tradition and learning of western civilization and to staff the ranks of the clergy and the civil service, neither it nor the institution in which it was pursued was perceived – as the twentieth century beckoned – to be adequate to the future. If a nation were to count for something in this beckoning future, leadership status would have to be earned in ways that required, among other things, a transformation of higher education. More people would have to be more highly trained in a broader range of areas. Further as time passed it seemed that basic research, the resultant discovery of new knowledge, and the capacity to continue to learn and develop new ideas might be an immensely practical

requirement for sustaining both economic growth and the development of the society more broadly speaking.

This led, at least in the North American context, to the model of the modern research university system devoted to mass education in the context of a constantly renewed search for new ideas and understandings. In an historically rather astonishing development, the notion developed that society could benefit – economically and in other ways – from institutions of higher education that were characterized by free, open and thoughtful debate (concerning science and society), deliberative and critical practices that were non-coercive, and that would become independent centers for the development of new knowledge and understanding of all kinds. The system of higher education became much more heterogeneous both intellectually and socially, and for many universities graduate education and research became a much more important organizing force. These developments taken together allowed these universities to become, in fact, one of contemporary society's most important institutions, a status with its own costs and benefits, but one that had never before been attained on such a wide basis by institutions of higher education.

Of course no one anticipated, as the twentieth century dawned, the explosion of knowledge that has taken place during the current century. This has led to further increases in academic specialization and, in some cases, a reconstitution of particular disciplines and the redefinition of others. Moreover, many disciplines, especially in the social sciences and the humanities, have continually reshaped both the nature of their curriculum and their role in the surrounding culture. All this made it increasingly difficult to define a "core" curriculum. The expansion of knowledge also made many new technologies essential to the ongoing scholarly and educational progress of the university. These technologies are continuing to create new environments and agendas for both scholarship and education, and they are likely to continue to do so. It is likely, for example, that new technologies, together with the increasing heterogeneity of the student body, will induce the creation of an increasing variety of "social settings" for learning. Although some believe that our rapidly growing portfolio of software-integrated environments sustained on broadband communication networks may make current learning environments, and the institutions that sustain them, obsolete, we foresee less radical and heroic changes over the coming decades. Rather, we expect that current institutions will continue to change and adapt, and that new institutional forms also will evolve that will share the evolving educational obligations of post-secondary education.

UNDERSTANDING THE CURRENT RESPONSIBILITIES OF UNIVERSITIES

Not everyone, of course, perceives the current role of universities in the same way. Moreover, given the heterogeneity of post-secondary institutions, there is no reason to have a single view. Nevertheless, even with respect to the research universities, there continues to be a wide variety of competing views regarding the appropriate civic function of a nation's universities. Within the academy, for example, despite both the existence of many strong ties to the "outside" world and the central importance of the university's role in professional education since medieval times, there are some who still cling to the notion of a free but more isolated academic community organized around the complementary ideas of a classical liberal arts curriculum (whatever that is) and the disinterested search for new knowledge and understanding (i.e., where the scholarly agenda responds to the beat of a distinctive internal drummer). At the same time, however, there are others within the academy with quite different ideas and attitudes regarding the role of universities. Some consider the changing profile of higher education as reflecting – in a very appropriate and instrumental way – the need to provide the new skills required by a rapidly changing economic, social and cultural environment. These individuals acknowledge and celebrate the fact that the role of universities has shifted, from the provision of rather narrow range of scholarship and professional training and the education of a social elite to the provision of the ever broader-based elite required to sustain economic leadership and cultural order in a very different world. There are, of course, within the academy a wide variety of additional views.

More widespread than any of these "academic" perceptions is, however, what we understand as the view of the general populace. For most citizens, the salient social function of the university was, and still is, perceived both as a kind of vocational sieve through which pass those to whom will be allocated the better-paying jobs, and a partner in preserving the cultural inheritance they value the most. Before this century, a university degree was not, by and large, how one "got on" in life. Now, however, it is – even for the social elites. That is, the universities function (rather effectively) for both parents and students as a kind of social mobility ladder, a place where the cultural capital acquired has, in addition to its intrinsic worth, real cash value in the job market.

It is not, therefore, surprising that in our societies in which social mobility increasingly is seen not only as a possibility but also, increasingly, as a right of a fully expressed citizenship, there

has been, is and will continue to be growing demand – on the part of individuals but more especially on the part of groups (e.g., women, racial minorities, the disabled, aboriginal populations) traditionally excluded – for access to higher education in general and to universities in particular. In this context it is important to note that in the liberal democracies of the OECD countries, universities are supported primarily through the public purse. Even in the United States, the great private universities are, in fact, sustained in part through special features of the tax code and federal financial support for both university-based research programs and student financial aid. It is best, therefore, to think of these "private" institutions as operating as a very special kind of public trust. Given the critical nature of public funding, both direct and indirect, for higher education, the increasingly broad-based demand for access cannot be disputed, and higher education will continue to have not only education, scholarly and training functions but also those of providing social opportunities.

SOME CONSEQUENCES OF CHANGE

The consequences of these changes are both numerous and related to each other in a complex way, and there are many which, although interesting, we cannot hope to explore fully in this paper. For example, there remains fascinating work to be done in examining more carefully the changes in the life of the institutions of higher education that result solely from the increasing size of the enterprise. In this respect many observers have suggested that size, along with an expanded range of responsibilities and increasing specialization, has led to an environment within many colleges and universities in which each faculty member spends less and less time engaged directly with students, especially undergraduate students. Indeed, a whole new cohort of professional workers (e.g., counsellors, dormitory supervisors) has emerged, in part, to fill the vacuum. This development also arises, however, from the increased heterogeneity that characterizes the transition from a small, more homogeneous student body to a larger, more heterogeneous one. What makes such a development so interesting and complex is that it represents a response not only to the evolving scholarly and educational agenda, but to changes in various social arrangements and norms in the broader society, for example the proportion of women working in the labor market full time and the increasing participation in higher education. Other types of changes result more directly from the rapid expansion of the knowledge base and the need – in scholarship – for increased specialization. Some observers have suggested that these developments increasingly distance the faculty from their students (or research and scholarship from teaching), making it less likely that faculty will effectively relate to the more comprehensive and integrative demands of undergraduate education.

INCREASING HETEROGENEITY

Perhaps the most obvious consequence of the transition from an elite to a mass system of higher education is the increasing heterogeneity of the university community. This is not, as is often implied, limited to the intellectual capacity of the students, for that would suggest, among other things, that our previous criteria for student selection were entirely meritocratic in nature, and this is clearly not the case. In the transition to a mass system of higher education, opportunity for participation has opened to a range of groups and individuals whose capacity was always adequate but whose socio-economic context either did not encourage and/or did not allow for the option of higher education. On the other hand, it is only fair to acknowledge that at least in those jurisdictions in which there has been really significant growth in participation rates, there has also been a substantial widening of the range of students in terms not only of the levels of their preparedness (i.e., previous school achievement) and intellectual capacity but also of the motivation for their participation (i.e., their objectives). The notion of a college or a university as a community of shared values has, as a consequence, become increasingly strained. This is rather analogous to the strains and tensions felt in liberal democracies where,as in North America, the electorate has become increasingly pluralistic or multicultural. All coherent communities require some set of shared values, but increasingly pluralistic and democratic (i.e., non-coercive) societies find that the set of shared values in their increasingly multicultural world becomes smaller. Likewise in the world of higher education certain shared values have been sustained but others have given way in the service of meeting the needs of an ever more heterogeneous community.

The same phenomenon of increasing heterogeneity is increasingly characteristic of the faculty in post-secondary education. There is no doubt that the growth of the system, in size and wealth, has both attracted new populations to the teaching/research professions and widened the range of those considered to be within the admissible categories. Interestingly with regard to faculty, in many countries (especially colonial environments of which both Canada and Australia are examples), demand for staff has frequently exceeded domestic capacities, producing yet further heterogeneity, through importing of human capital, and additional demand for more higher education at yet higher levels. In addition, there have arisen increasingly heterogeneous views regarding the role of the scholar, the meaning of the scientific method and, therefore, the meaning of scholarship.

Heterogeneity – whether of preparedness, capacity, objective and/or motivation – is frequently cited as a challenging problem for university communities. We would suggest, however, that at least with respect to the wider range of achievement and objectives of the student body (and staff), one partial solution is not only at hand but has, in fact, been successfully implemented in at least some jurisdictions. This solution is, of course, differentiation of institutional missions. Whatever the self-serving rhetoric to the contrary, mass higher education systems can only exist when there is differentiation not only between different types of institutions as, for example, between polytechnics and universities, institutional and workplace programs, or community colleges and universities, but also among different institutions all of which have the same generic name. It is clear in all mass systems of higher education and in both the popular and the institutional mind that not all baccalaureate degrees are (or should be) the same and that not all baccalaureate institutions are (or should be) the same. Moreover, assuming that access between institutions and institutional and program types is not only possible in theory but feasible (although not necessarily easy) in practice, this kind of stratification is entirely appropriate to a mass and, therefore, necessarily heterogeneous system, for it allows for an increasing variety of responses that can better match the increasing variety in both the needs and objectives of faculty and students. Among other things, such differentiation is economically efficient. Differentiation must, therefore, not only be legitimized, it must also be espoused as a matter of deliberate public policy.

Indeed, we would argue that in the American case, it is the steeply and inherently stratified nature of the mass higher education system that has made possible the relatively small number of great research universities which combine liberal and professional education with graduate education and research. It was – as has been frequently pointed out – both the wealth and heterogeneity of this enterprise as a whole that allowed those relatively few institutions to afford the critical and costly inputs necessary for their success. To argue, however, that this rich resource base is necessary for all meaningful higher education is to take a position that is not only contradicted by the facts but is also a disservice to students, not to mention the public treasury.

THE STAGES OF EXPANSION – A CONTROVERSIAL PERSPECTIVE

Approaching this matter from a slightly different angle, one might argue that we should expect two stages in the expansion of higher education, one of which we have already experienced. At

this first stage, there is growing differentiation between institutional types; the public system of the State of California is, perhaps, one of the best developed of the first stage models. At this stage, there is the "university" and then there are the "others". This stage, from the point of view of the University community, is characterized by growing resource commitments by governments (and others), by a greater respect for university values, and a general but ambivalent deference toward university autonomy. This state of development eventually, however, may be undermined by the increased need to reconcile more completely our concerns around quality with our concerns around equity, to manage more carefully the pace of institutional growth (and costs) and, in many jurisdictions, to rediscover the value of the market as opposed to central planning. Also associated with Stage Two will be an increase in the number of stakeholder groups, a reduction in the range of shared values between members of the community, a renewed focus on accountability, demands for greater justification for the public investment in universities, and, perhaps, a more marked differentiation between teaching and research services.

Differentiation, however, whatever its advantages, has its "down" sides. First, the issue of quality control quickly emerges, and second it allows and has, in fact, encouraged an inappropriate credentialism. At another level, this growing credentialism has led to a downgrading not only of the value of skilled practical work but also of alternative training models based, for example, in the workplace. Finally, there is the often predicted but seldom realized danger that greater participation rates would eventually produce the double phenomenon of (i) a relative decline in the guaranteed cash/employment value of the credential in an increasingly dubious social and vocational sorting system and (ii) a greater emphasis on higher and higher level degrees, diplomas, certificates, etc., postponing – in the university world – the implicitly promised "pay off" to well beyond the PhD! Perhaps it was these combined "dangers" that led A.N. Wilson to imagine Trevelyan's response to the perceived decline of the "classical" donnish dominion:

> **Deprived of money by the right and of good sense by the left, the universities were forced to lower the stockade and allow the hordes to come in, trampling and destroying everything in their path.**

THE ISSUES OF COST AND ACCOUNTABILITY

While we cannot be completely comprehensive, the object of this essay is to highlight in some detail what we believe to be some of the interesting consequences of the continued expansion of systems of higher education. In particular, we are interested in the increased public scrutiny that the enterprise will always face as it begins to account for a larger and larger share of the public purse. The inevitable result is a much more public focus on the costs and benefits of the enterprise. Moreover, since the benefits are much harder to measure, or even articulate carefully, the public discourse is likely to focus on costs. Indeed, for those charged with the responsibility of public policy, the problems and challenges of the changing dynamics of institutional life, the increasing heterogeneity of the community of higher education, inter- and intra-institutional differentiation and excessive credentialism, curricular reform and the correct balancing of the various social outputs of the contemporary university (e.g., teaching, research, etc.) – however interesting and substantively relevant to the future of higher education and society – all pale beside the challenge to mass higher education of increased costs. This accounts for the particular focus of our remaining remarks.

There are, of course, a number of ways for "coming at" the matter of the costs of higher education. It is important, however, to begin by noting that for the most part costs have risen as the result of a specific public policy to underwrite the increasingly broad commitment to higher education. In some sense, therefore, these rising costs are the natural result of asking the institutions of higher education to provide more and more students with an ever broader array of programs and to take on new and socially valuable functions in other areas (e.g., scholarship). The data also reveal, however, that even when adjusted as carefully as possible for inflation and the expansion of service (i.e., outputs), costs have increased as substantially as they have for other types of education and virtually all services including health services and legal services.

As the rapidly industrializing societies became more productive and wealthier, they – virtually universally – chose to allocate some of these dividends to expanding their commitments to higher education. Economic growth, therefore, has been central to the growth of higher education, and it will certainly remain the case that the general state of a national economy will remain the most important single factor affecting a society's level of investment in higher education. National wealth makes the support of a "world class" university system possible, but it is the perceived social and economic benefits of the outputs of university programs that induce

a society to make the necessary resource commitments. The willingness of so many nations to increase – over the last century – the share of their Gross Domestic Product (GDP) which they invest in higher education reflects in one sense changing priorities; higher education was seen both as a valuable cultural ornament and, more importantly, as an investment in a critical component of the nation's innovation system and, therefore, its future economic growth. As a result, it was seen as a highly desirable way to allocate a portion of society's increased wealth. Given the increasing costs of maintaining a position on the scholarly and educational frontier, sustaining a "world class" system will probably continue to require a rapidly growing economy.

The heightened level of this investment required has, however, brought with it a heightened interest on the part of both governments and taxpayers in the extent to which the institutions of higher education are effectively and efficiently serving the civic function(s) on the basis of which support has been provided in the first instance. After all, perhaps one of the most salient characteristics of a mass system of higher education is that it makes very large demands on other people's resources. It is not, therefore, surprising that in the difficult economic circumstances in which so many countries now find themselves as structural adjustments are made to the new realities of a global economy, a central issue is, and will continue to be, whether the public investment in higher education is seen to provide sufficient value-added to claim priority on public and/or private resources. We believe that in most OECD countries, there is, as a result, a considerable concern and tension regarding the appropriate role for institutions of higher education and the extent to which higher education has been meeting and can continue to meet its responsibilities to the various communities that provide its support. In particular, it has become clearer to the public that progress has both benefits and costs and that science and education alone cannot solve all our important problems.

In most jurisdictions, average instructional costs per student and other "unit" costs in higher education have risen continuously even when adjusted for inflation. Further, given the increased costs, both operating and capital, of education and scholarship in almost every field, it is clear that at least for those institutions with mandates and/or pretensions to excellence, the rate of growth in both external and internal sources of support has often not been adequate to continued leadership across the broad front of programs in which these institutions have expected to be active.

Moreover, we hear from many quarters not only that the costs of university programs are high but that they are too high. It is not helpful to deny the concern, decide that it is someone else's problem, or simply to declare that the value of these programs to society must be "worth it".

First, we should understand at the very least that, in our current economic situation, all of society's resource commitments will receive increased scrutiny. In addition, however, we (those of us in higher education) have a special responsibility to bring the most careful analysis to the public debate over costs. We need to demonstrate, for example, that grouping together disparate and complex phenomena under an all-purpose rubric of total costs may not only mask particularities and complexities, but obscure from view the most helpful solutions. In the area of costs, for example, we can think of a number of quite separate meanings for the claim that costs are too high.

1) Costs in higher education are too high because the price of inputs (i.e., faculty and staff salaries, book prices, equipment prices, etc.) are too high.

2) Costs in higher education are too high because resources are being used inefficiently (i.e., waste).

3) Costs in higher education are too high because university resources are not deployed in a manner that generates the combination of outputs most highly valued by society. In this case, the dividends to society are not as high as they might be, and the issue is not so much one of total costs but of redeploying university assets to achieve a more highly valued combination of outputs. For example, society might prefer more education and less scholarship or *vice versa*.

4) The costs of higher education are too high because the outputs of higher education – even if produced in the most efficient way, using appropriately priced inputs, and deployed at the right targets – are simply not valuable enough, given society's other needs. In this case, the claim is that what economists call the "opportunity costs" of our national resource commitment to higher education are too high, and resources need to be transferred from higher education to other sectors.

5) It is not that costs are too high, but that tuition and fees (i.e., the cost burden falling directly on students and/or their families) are too high. In this case, the issue concerns the appropriate allocation of costs – and benefits – among the various supporters (i.e., patrons, customers, etc.) of higher education. Adjustments in burden-sharing could, of course, move in another direction (i.e., increase the burden on students and family).

Once we have decided which of these sources of concern (or which combination of them) is the basis of the criticism, then we can begin to outline appropriate actions, both public and private. In some cases, this might require overall downsizing of higher education; in other cases, shifting resources; and in still other cases pushing for increased (or decreased) subsidies to students, or trying to understand why existing markets for our inputs are generating such high prices. The failure to be explicit about which cost and/or tuition issue we are concerned with could lead to actions which lower costs and/or tuition levels but leave society worse off.

In general, and given the currently foreseeable range and ordering of government priorities, we want to suggest that in most OECD countries higher education is facing a long run situation in which the overall rate of growth in revenues will be somewhat lower than would be necessary to maintain the quality, scope (with regard to both program and student access) and method of production of the current system. We must, therefore, ask ourselves – if only in response to the voiced concerns of students, parents, taxpayers and others regarding access, costs, quality and value on both the teaching and the research side – whether, for example, the current allocation of our resources among our principal social outputs of teaching, scholarship and service reflects society's greatest needs and/or whether current modes of production are too resource intensive. In other words, too expensive!

As noted above, too often the response of higher education to these concerns has been some combination of (i) denial that any problem exists, (ii) projection – the problem really lies elsewhere – and/or (iii) paranoia (we are the objects of a witch hunt) or, beyond these, even a hostility to the communities that support us. This refusal to deal with the concerns of others – in so many cases an implicit unwillingness to admit to the need to change in some way that would be relevant to the dramatic changes in the world around us – is either a denial of our own history (higher education as a kind of self-sufficient and self-justifying monastic community was never more than a figment of our imaginations) and/or an indulgence inappropriate in a democratic environment for a social enterprise of such substantial proportions.

Given what is likely to be the increasing demand for ever-more substantial and sophisticated development of our human resources, indeed given the already apparent understanding that for most nations or, indeed, groups of nations, natural resources and/or immigration however necessary will not be sufficient for their continuing economic development – mass higher education systems are, we believe, a long term characteristic of the environment in the twenty-first century. As we have already suggested, it is primarily and appropriately through differentiation, both explicit and implicit, that we have expanded and are expanding our systems

of higher education. Political and social status issues aside, even though these are important issues to be dealt with in their own right, the present challenges don't relate to whether or how a mass education system should be developed, but rather to how these systems should be managed in a new age.

We cannot pretend to know precisely how to do this in our own jurisdictions let alone how to recommend exactly how other communities might productively address the issues involved, some of which have already been referred to. We do, however, have a number of propositions that point, we believe, to the challenges that each of us face, and we would like to take this opportunity to bring these forward. Given the importance that we have attached to the increasing costs of higher education, we will discuss these propositions in terms of costs, differentiating only between those dealing with relatively technical matters and those dealing with the major consequence of increased costs – i.e., demand for greater accountability.

SOME PROPOSITIONS

On the relatively technical side, we have four propositions to suggest:

I. That in assessing costs of higher education, productivity (costs vs. benefits) will have to be gauged not only by comparisons between like institutions, such as the various research universities, but also by comparisons (1) between institutional types (e.g., teaching vs. teaching/research institutions) and (2) between the various educational sectors (e.g., higher education vs. elementary secondary education) and (3) non-educational social needs.

In terms of social policy, these kinds of comparisons are crucial since upon such judgments future investment decisions (public and/or private) will be based.

II. That the individual institution, at least in so far as it is research oriented, may not be the appropriate unit for allocation of costs.

University-based research programs produce and place new information in the public domain. The central issue for new information, however, is not ownership but access, and it is by no means clear how to either calculate or allocate the costs incurred or the special benefits enjoyed in developing the new information in the first instance. This is particularly a problem since the

world is now characterized by: (a) inter-institutional and inter-jurisdictional consortia and/or integrated "information nets" that are a common feature of frontier-level work and (b) very little interest in the issue of what the cost/price should be for the transfer of basic research findings from those who generate and/or store new information to those who require access to it. This is a particularly difficult issue across national borders when, for example, different nations have different socio-economic institutions and quite different levels of public commitment to the overall effort. As is easily imagined, in countries such as the United States which make large investments in basic research, most of which is freely available to all, it is a salient question of public policy whether the nation is providing more than its share of the global effort while allowing the dividends to flow abroad at prices that may be disadvantageous.

Moving away – at least for some purposes – from the institution as a basis of analysis also recognizes the "guild" nature of faculty in higher education, primarily individuals whose substantive loyalties and interactions are to the "discipline" and/or the "profession" and/or the particular subject matter and whose professional life, therefore, is somewhat independent of their institutional "home". They are, however, closely related to each other worldwide by deep information flows. Science, in this sense, is internationalized. However, as the nations of the industrialized world converge in terms of per capita incomes, productivity and capacity for discovery and innovation, the issue of "fair share" in the support of an internationalized science will become ever more salient. Despite the difficulty of institutional accounting or even national accounting, we cannot of course lose track of the issue of institutional survival and the survival of the national scientific enterprise and innovation system.

III. That within and between institutions, it will be necessary to re-examine the allocation of resources among the principal social outputs – teaching, scholarship and service – of higher education.

Given the challenges facing public policy in most nations it will be increasingly necessary to ask if the current allocation of university-based resources, and the resulting outputs, actually reflect society's greatest needs. It is crucial that we consciously pursue this issue if only because of the recognition that the gap between the finite resources available and the infinite number of good things that might be done is considerable, and our existing models, however appropriate to current circumstances, might need to respond to a new environment. At the very least, we need to organize institutional budget offices to move beyond mere issues of controllership (counting) so as to be able to cope creatively with such analytical and policy questions.

IV. That the costs of higher education will continue to be shared between particular patrons (e.g., the state, the private sector) and students.

Higher education provides both substantive value in terms of what is actually developed in the form of new understanding (scholarship), what is actually learned by students, and "sorting" value in that a credential becomes a pre-requisite in the allocation of jobs. In a world of perfect markets and "equitable" income shares, there is probably no more efficient way of assessing the value of the "sorting" component of higher education than by allowing the market to determine just what students are willing to pay for it. Markets, however, are not perfect and scholarship and education contain many important externalities, and income shares are not yet equitably distributed. As a result public and private subsidies ought to be a continued characteristic of the higher education system. The difficulty for public policy, however, is that there seems to be no natural regulator to the size of higher education systems, and it is difficult, therefore, to understand what the total level of public subsidy should be and how it should be distributed.

We have six further propositions to suggest in the area of accountability. What we are referring to by accountability in a mass system of higher education is twofold: cost effectiveness and productivity on the one hand, and, on the other hand, responsiveness. There are interrelated issues that address both the efficient use of resources and the allocation of these resources to the most highly valued social outputs.

V. That responsiveness (reallocating or redeploying university-based resources) may be particularly difficult to achieve for those higher education institutions, such as universities, which are based on distributed collegial notions of governance.

There are many advantages to collegial governance. Indeed, some would say that there are many advantages to universities with presidents or vice-chancellors who have a lot of responsibility but no authority. The difficulty with collegiality in an environment of substantial change is that it can become so biased in favor of the status quo, not to mention the status quo ante. It is much simpler, in human terms, to be supportive of the mission of each colleague rather than take up the burden of responsive choice. The challenge will be to redefine our understandings so that, in empirical terms, collegiality and choice are not mutually exclusive.

VI. Institutions in higher education will have to find ways to increase their productivity. In some cases, they may also have to reduce their overall costs.

Traditionally, institutions of higher education have not been very sensitive to issues of their own productivity, at least in terms that could be understood by those who are not members of the institutional community itself. Not only have "modes of production" been slow to change but those productivity increases that have been achieved – and there are many – have been channeled into expanding the existing enterprise and not always along lines desired by the patrons of higher education. In part, higher education's patrons increasingly want to be consulted on the reallocation of these dividends. It is, of course, not so easy to find appropriate measures of quality-adjusted productivity. The challenge, however, is to seriously entertain the search for new approaches that might maintain or even enhance quality and require less extensive use of our scarcest and most expensive resources. In the past, as noted above, where we have made such gains (e.g., in computing), we have used them to finance expanded agendas in education. We must now not only realize these gains, but we must also develop a fuller set of alternatives regarding the investment and/or distribution of these gains.

VII. That in order to realize the productivity gains that will be necessary, we must seriously consider a much wider range of pedagogies and entertain new ideas regarding the structure of university-based research programs.

It is suggested in many fora that there is a kind of triangulation of factors affecting higher education, a triangulation among access (number of students served), resources invested, and product quality. This was thought to be a creative argument for convincing the state, which clearly wanted to maintain access and which was assumed to be concerned as well with quality, that more public funds should be provided for higher education. The argument assumes, however, that the ways in which higher education currently delivers its teaching and research services have either reached the limit of their efficiency and/or have in any case the status of the eternal verities. Neither of these assumptions seems to us to be demonstrably true, and certainly neither represents a useful strategic choice in the on-going dialogue between our institutions and the taxpayer. The challenge is not only to re-examine the genuine educational value of an increasingly diverse and specialized curriculum in undergraduate education, as well as the range of any scholarly commitments, but also to investigate the possibility of reinventing the teaching mode. This might be accomplished through the reorientation and/or recombination of the disciplines, new curriculum, the better use of technology, independent study, cooperative

education, changing the relationship of undergraduate and graduate education, prior learning assessment, and credit transfer.

VIII. That for most colleges and most universities, the undergraduate curriculum must be revised.

It is not just that the increasingly diverse and specialized undergraduate curriculum is expensive. It is also that most undergraduate curricula especially, but not only, in institutions with graduate programs, are not adequately responsive to the needs of undergraduates, the evolving nature of many disciplines, and the needs of the broader society. It is certainly an exaggeration to suggest that most undergraduate programs are simply watered down versions of the related graduate program or that most high school programs are just watered down versions of the undergraduate program, but it is not a grotesque exaggeration. The world (real or imagined) seldom exhibits any close analogy to the spectrum of disciplines that characterize university life and organization. Is this a useful or non-adaptive discrepancy? The challenge is to develop our teaching programs so that they most effectively meet the needs of our students and our society, even if this requires heroic or new and daring acts of teaching, rather than what is most simply and conveniently available.

It needs to be added that reaching for these kinds of changes will require that the communities of higher education reconsider the ways in which they are organized to carry out their normal functions. Will, for example, the new and emerging demands of education and/or scholarship stimulate a redistribution of authority from administration to departments and, perhaps, individual faculty to newly defined academic divisions that might contain more than one discipline? With regard to inter-institutional arrangements, how can autonomy (increasingly a conditional autonomy in so many ways) be redefined so that, again for example, it is shared within the units of the higher education sector rather than always seen as a "zero-sum" exercise between an institution and its chief patron, the state?

IX. That the various distinct patrons of higher education may insist that the various social outputs of higher education such as teaching and scholarship, be funded separately.

We recognize that within an institution and/or within a particular department, the various functions, such as those of teaching and research, are or should be intimately related to each other so that each is in some sense a joint product of the other in a way that is very difficult and,

perhaps, counterproductive to separate out. Nevertheless, given the built-in inertia of the status quo, and the changing views of higher education's patrons, separate funding might be the only way – in the view of our patrons – to force institutions to make the difficult choices in a manner consistent with their particular needs. In this environment, the maintenance of quality standards will increasingly require institutions to choose what not to do if only so as to deliver excellence in those functions on which they will focus in the future.

X. The new challenge will be to decide just how institutions – building on a thinner base of common social values and cultural experiences – can find mechanisms to both recognize the many distinct cultural identities that form the society's increasingly complex mosaic while also achieving a secure learning environment for everyone.

These concerns raise such issues as: What moral perspectives do we need to share in order to reason and work together effectively? How should our society or higher education give full meaning to both equal representation (in its many forms) and individual freedom and responsibility? How do we define and sustain a set of shared moral sensibilities?

XI. The capacity of higher education to achieve its objectives will depend, in part, on the extent to which they can reach out to both the world of the elementary and secondary schools and the concerns and resources of other sectors and agencies.

The traditional relationship between higher education and the elementary/secondary schools has been one of parent/child and has, therefore, been patronizing even when productive. This worked, often well, in an elite system of higher education. In a mass system, increased emphasis on access makes the previous arrangements unproductive. What is now required is not some lessening of standards in order to meet the new populations on their own ground but an active role on the part of higher education in working with our schools, with our parents and with our students at a much earlier time so as to help all those involved to seriously consider higher education, whatever their individual backgrounds, as an option for their own futures.

The need for relating to the concerns and resources of other sectors and agencies is a different matter and not, for present purposes, directly related to fund-raising. As Sir Douglas Hague has pointed out, a knowledge-intensive society will have increasing needs for, and place increasing demands on, its system of higher education. Professor Hague adds, however, that at the same

time, the increasing prominence of knowledge-based enterprises within each of our societies may dramatically attenuate the relative monopoly that higher education has had on knowledge workers, knowledge facilities such as libraries, and teaching resources such as classrooms and laboratories. Direct competition between these enterprises and agencies on the one hand and the institutions of higher education on the other is unlikely to result in an advantageous outcome for higher education. The challenge for higher education is, therefore, to craft new alliances, to reach out to others and to find those areas in which appropriate cooperation will be of mutual benefit.

CONCLUSION

Clearly the eleven propositions herein focus only on a subset of the challenges facing systems of higher education. Nevertheless, we believe that these propositions represent a set of issues, many of which are related, that are worth considering in the context of the continuing transition from an elite or small system to a mass or large system of higher education.

One could summarize many of the above considerations by focusing on the half dozen interrelated public policy concerns that emerge from the transformation of higher education from a small (and often peripheral) to a large and central social system. These six interrelated issues are access, numbers, cost/benefit issues, diversity, quality, and the role of higher education.

Access to any type of service remains a complex matter of finance, geography, and a web of cultural considerations. Nevertheless, access to higher education will be an increasingly important aspect of public policy in this area and a key determinant of the level and distribution of public subsidies.

Numbers reflects the continuing search for the "right" size of the system of higher education. This reduces to a political choice as public policy attempts to balance the demands for resources between education and other social needs, the young and the old, the undergraduate and the graduate, the disciplines and the professions, the universities and the colleges, etc.

Cost/Benefit concerns focus on the appropriate source (i.e., government or private) of support for the higher education system. What is the appropriate balance as between public and private subsidy? Who are the beneficiaries? Do user fees or tuition charges promote or undermine efficiency, access, autonomy, etc.?

Diversity focuses on the need for diverse institutional forms and styles to respond to the increasing diversity in experience and objectives among students. The challenge reduces to simultaneously achieving, among institutions, differentiation of mission and uniformity of excellence in the pursuit of their particular goals.

Quality is both a question of absolute standards and value for money. There continues to be a perception of inefficiency in higher education although the institutions are often more efficient and responsive than generally recognized. It is understood that the definition of quality is highly problematic but that despite the difficulties, we must, in fact, continue to judge.

Role is also a conundrum for higher education. To what extent is the enterprise to be supported on economic (probably necessary but not sufficient) grounds as opposed to cultural grounds, and/or equity grounds, and/or custodial grounds (i.e., keeping individuals off the labor market), and/or personal grounds, and/or grounds of knowledge for its own sake?

Whatever the actual approach, much more systematic research and discussion needs to be undertaken if any – not to say all – of the issues brought forward in this paper are to be productively and to some extent rationally resolved. There are, however, two further considerations that should be broached if the issue of the transition from an elite to a mass system of higher education is to be understood in its broader context. These considerations are first, the modesty appropriate to our claims and expectations for higher education and second, the importance of at least one issue in higher education more basic than the question of elite as opposed to mass systems of higher education – that is, the future vitality of society's liberal institutions.

With regard to modesty, we accept the apparent but not always acknowledged consensus that our ability to compete in an emerging global economy is likely to be increasingly based on the availability of a highly educated and motivated workforce and, moreover, that those societies that are adapting most successfully to new "realities" of the global economy are those that have historically placed a very high value on learning and regard it as a lifelong process. Thus, education in general and higher education in particular can be seen as central to our common effort to create sufficient wealth to support both the standard of living that we are or would like to be accustomed to and the broad range of social, medical, and human services that characterize the nature of the society we would like to become.

Consequently, it seems commonly believed that higher education assists in making its jurisdiction more economically competitive through, for example, the process by which the discoveries and new knowledge from basic research and the human capital developed can be used to deploy technology that leads to economic, social and political dividends. This is, however, a vastly oversimplified argument. Not only does it seem to put aside valuable knowledge that is unlikely to have commercial applications, but it also ignores the lessons of history in which it is quite apparent that those jurisdictions that invest in research are not always the same that benefit from it. In the eighteenth century, for example, England was the first country to take economic advantage of the knowledge that made the industrial revolution possible. England was not, however, more technologically advanced than, for example, certain other parts of the European continent. What it had, however, in comparison to certain other countries at the same time, was a set of stable political institutions and social arrangements that enabled it to exploit the new possibilities. In our own century, the United States has been a world leader in science on almost every front for the last half-century, but this has not enabled it to generalize this quite stunning success to a comparable achievement on the economic front.

In pressing, therefore, for social investments in higher education, a little modesty is in order. The impact of higher education on economic competitiveness (and vice-versa) is important, but it is subtle and complex. Such investments may be necessary – after all, the quality of any nation's research capacity will depend on the ability of its scientists to participate and cooperate in new global information networks – but it is not sufficient. It will, in the final analysis, be the quality of the mediating social, political and cultural institutions that enable a society to actually benefit from the value of its investments in higher education. Therefore, those of us who advocate for support for higher education need as well to be and to be seen to be champions for those other social investments (such as health) and practices that will be necessary for the value of our own work to be fully realized.

With regard to an issue more basic than that of the transition to a mass system of higher education, we must consider whether each of our societies will have the imagination to sustain, renovate and enliven our liberal institutions, of which the contemporary university is one, in a cultural and economic environment that is rapidly changing. In this context and with particular regard to higher education, do we and will we still have faith in the importance of verifiable ways of knowing and the value of free thought and questioning?

On an even more basic level, the real problem may be a loss of faith within the academy itself in the possibility of truth. One does not have to deny the importance of the social construction

of reality in order to express some dismay at the potential hazard to our enterprise of taking deconstruction, decentering, demystification, discontinuity, etc. to their extremes in which, to quote from Richard Tarnas, "...all human thought is ultimately generated and bound by idiosyncratic cultural linguistic forms of life...(and)...the highest value for any perspective is its capacity to be temporarily useful..." This, if taken seriously, undermines the whole liberal project of higher education. If everyone's truth is as good as everyone else's, the human encounter threatens, as Nietzsche suggested it might, to reduce to a contest between human wills. In Solzhenitsyn's words, "...(if) the world is (simply) a text, a text that any post-modernist is willing to compose, how clamorous it all (will be)...but also – how helpless." Bringing Solzhenitsyn and the deconstructionists together will be no small task! The challenge is to develop a new conception that will transcend radical deconstructionism, the "unmasking of knowledge", with a new world view focused on the integration of our new with our previous understandings.

Higher education is always in some state of tension. After all, our systems of higher education are expected at one and the same time "...to be servants in the preservation and transmission of our cultural inheritance and our common memory, to be servants in the education and training of the next generation of young people, and to be discoverers of new understandings of the natural world and our evolving human condition." We cannot, however, draw back from these obligations which are indeed those roles that connect us to the interests of others. The challenge is to find a way to go forward actively embracing both the dissonance and the ambiguities.

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